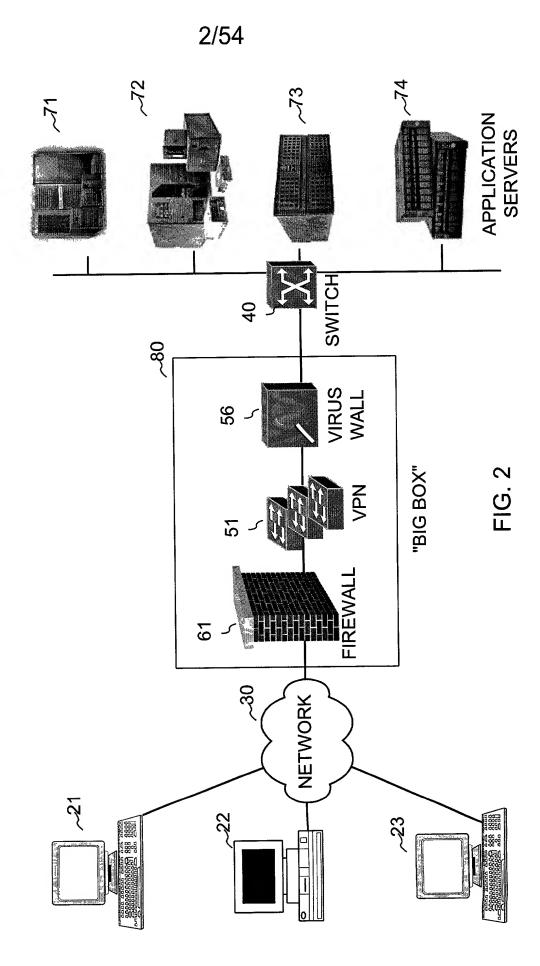


FIG. 1



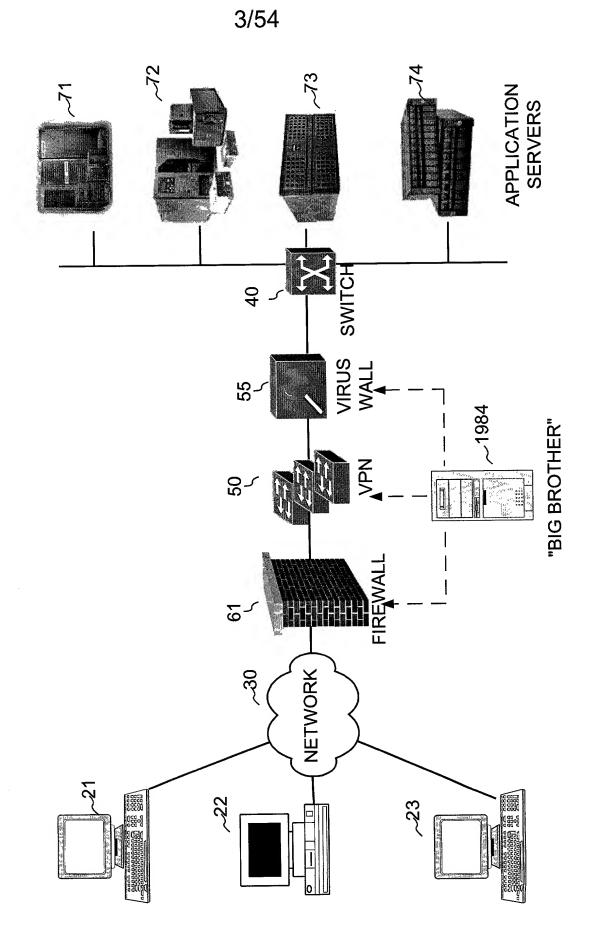


FIG. 3

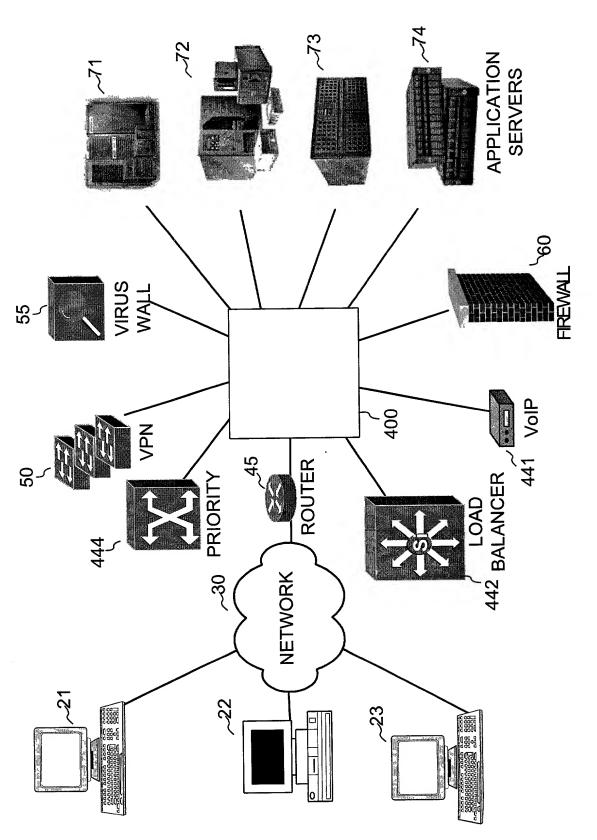
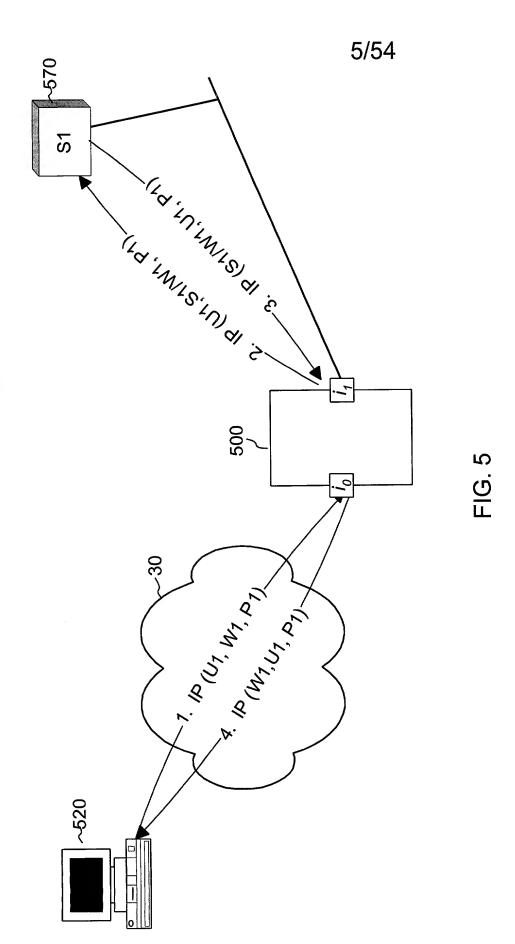


FIG. 4



STEP FROM	FROM	01	SOURCE IP	DESTINATION IP	SERVICE
_	U1 (CLIENT)	PACKETING ENGINE	10	W1	Ъ1
2	PACKETING ENGINE	S1 (SERVER)	U1	S1 (IF NAT IS REQUIRED); W1 (IF S1 SUPPORTS LOOPBACK	7
က	S1	PACKETING ENGINE	S1 (IF NAT IS REQUIRED); W1 (IF S1 SUPPORTS LOOPBACK OR ALIAS)	U1	P
4	PACKETING ENGINE	70	W1	01	P1

FIG. 5A

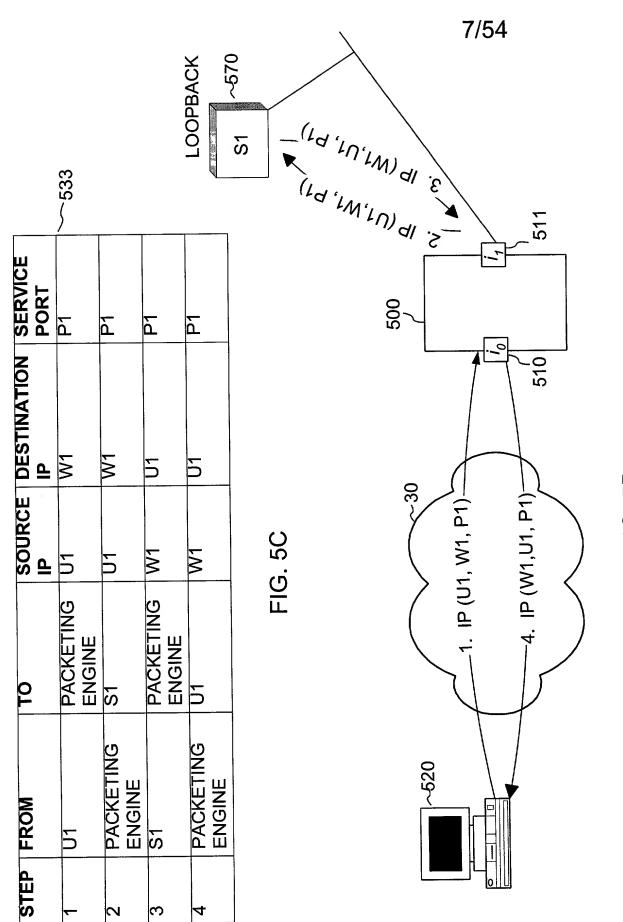
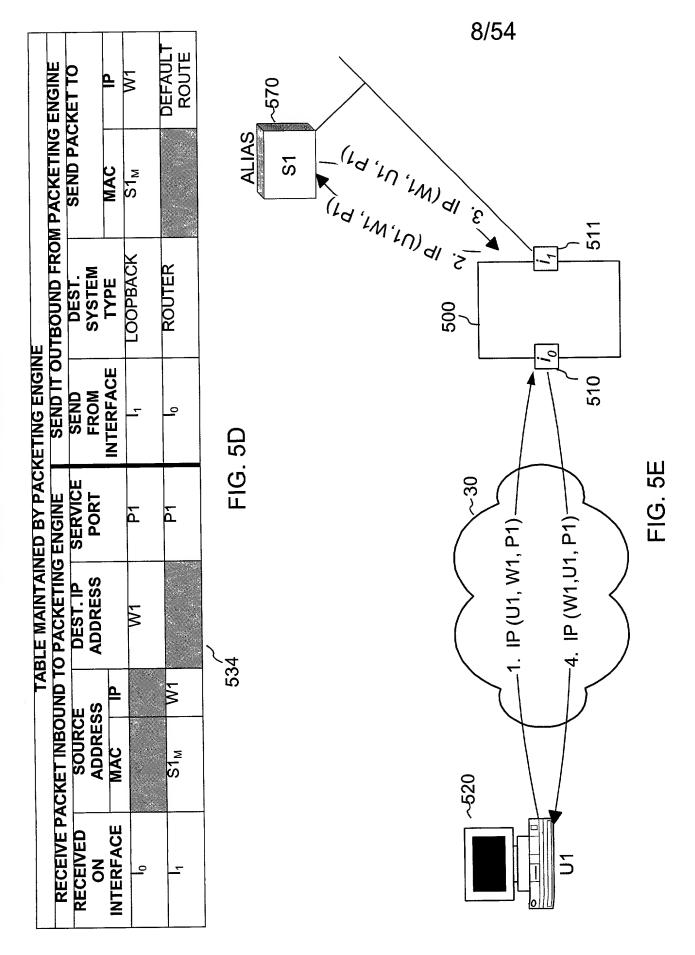


FIG. 5B



TEP	STEP FROM	10	SOURCE	SOURCE DESTINATION SERVICE	SERVICE
			ᅀ	Ы	PORT
	U 1	PACKETING U1 ENGINE	U 1	W1	<u>~</u>
	PACKETING ENGINE	S1	D1	W1	Ъ1
_	S1	PACKETING W1 ENGINE	W1	U1	<u>T</u>
4	PACKETING ENGINE	D I	W1	U 1	7

FIG. 5F

	S ENGINE	KET TO	_	<u>ጉ</u>	M1	DEFAULT ROUTE	
	SEND IT OUTBOUND FROM PACKETING ENGINE	SEND PACKET TO		MAC	გ ⊼		538
	INE SUTBOUND FRO	DEST.	SYSTEM	IYPE	ALIAS	ROUTER	37
VETINIO ENIO	SENDIT C	SEND VIA	Ë			ol	537
	GENGINE	SERVICE	PORT		4	Ð.	
	RECEIVE PACKET INBOUND TO PACKETING ENGINE	DESTINATION	IP ADDRESS		M1		
	ET INBOUN	SOURCE		<u>a</u>		W1	
	IVE PACK	nos	ADD	MAC		S1 _M	
	RECE	RCX	NO O	Ľ	0,	-	

FIG. 5G

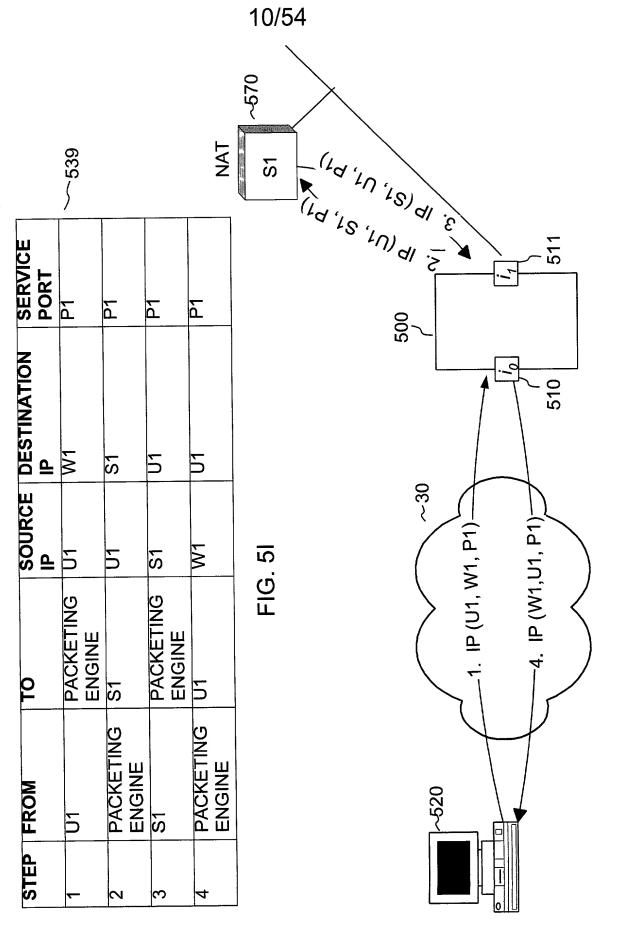
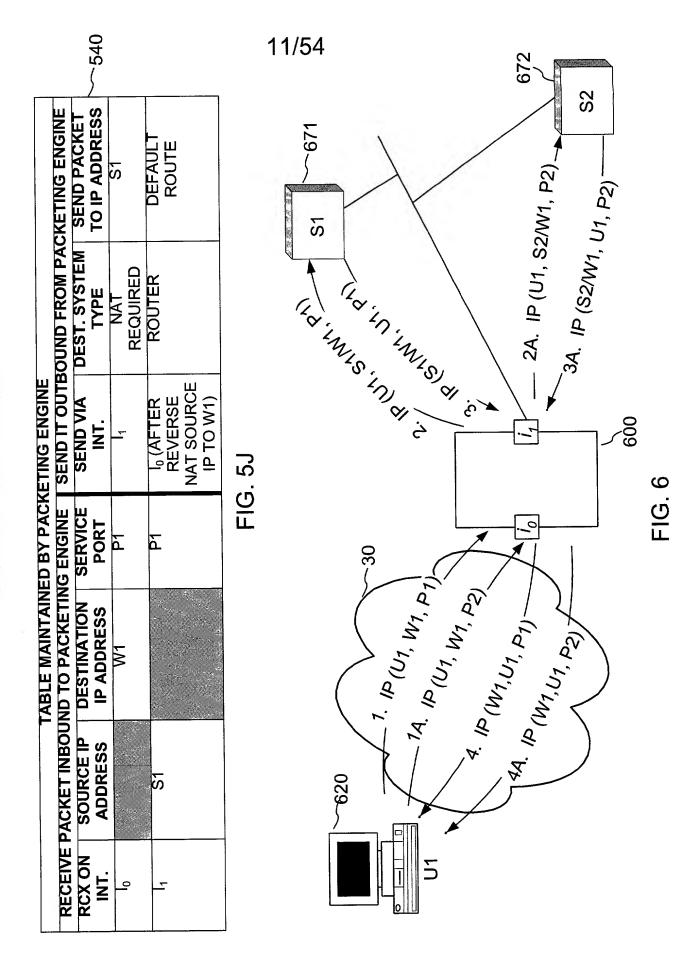


FIG. 5H

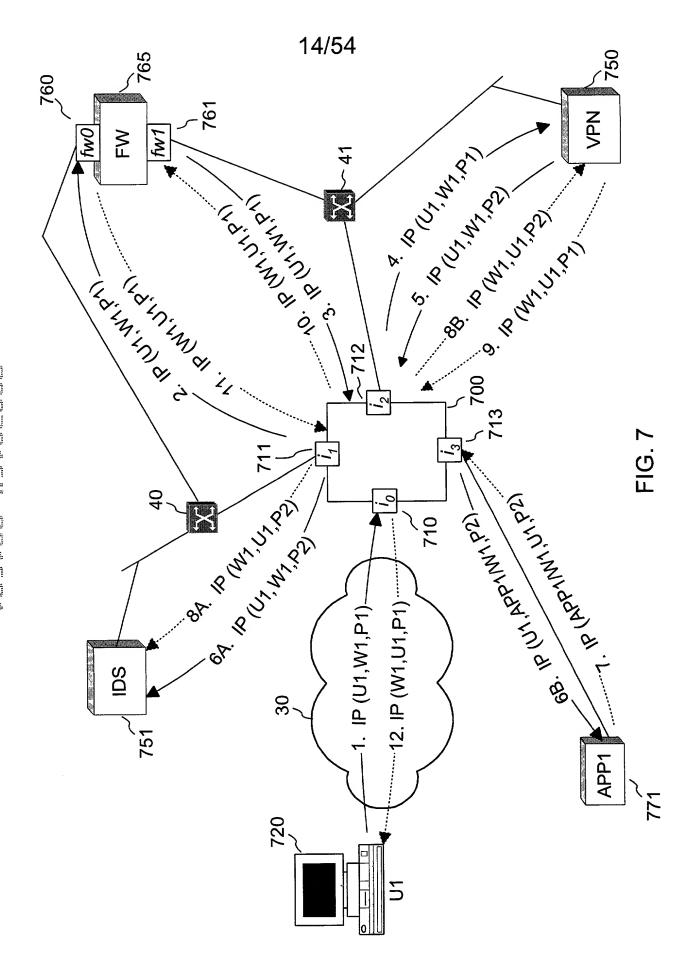


STEP	FROM	10	SOURCE IP	DESTINATION IP	PORT
			FORT BA		
	U1 (CLIENT)	PACKETING ENGINE			<u>م</u>
7	PACKETING ENGINE	S1 (SERVER)	10	S1 (IF NAT IS REQUIRED); W1 (IF S1 SUPPORTS LOOPBACK	7
				OR ALIAS)	Ĺ
€	S1	PACKETING ENGINE	S1 (IF NAT IS REQUIRED); W1 (IF S1	7	<u> </u>
			OR ALIAS)		
4	PACKETING	101	W1	U1	7
	ENGINE			600 - 1 115 115 12 1 1 1 1 1 1 1 1 1 1 1 1 1	
			PORT P2		
1A	U1 (CLIENT)	NG N	U1	M1	P2
		ENGINE		OI HALL	
2A	PACKETING ENGINE	S2 (SERVER)		S2 (IF NAT IS REQUIRED); W1 (IF S2	7 Z
				SUPPORTS LOOPBACK OR ALIAS)	
3A	S1	PACKETING	S2 (IF NAT IS REQUIRED): W1 (IF S1	U1	P2
, · · ···			SUPPORTS LOOPBACK		
			OR ALIAS)		
44	PACKETING ENGINE	<u>U</u>	W1	U1	P2
			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	631	

12/54

FIG. 6A

RECE	TABLE MAINTAINE RECEIVE PACKET INBOUND TO PACKETING	TABLE I BOUND TO PA	MAINTAINED ACKETING	TABLE MAINTAINED BY PACKETING ENGINE ID TO PACKETING SEND IT OUTBOUR	CCKETING ENGINE SEND IT OUTBOUND FROM PACKETING ENGINE	KETING EN	IGINE
SCX ON	SOURCE IP ADDRESS	DEST. IP ADDRESS	SERVICE	SEND VIA INT.	DEST. SYSTEM TYPE	SEND PA	SEND PACKET TO
IN.	MAC IP					MAC	<u>a</u>
0		W1	P		LOOPBACK	S1 _M	W1
)					ALIAS	S1 _M	W1
					NAT		S1
<u> </u>	S1 _M W1		Ы	01	ROUTER		DEFAULT
•	S1 _M S1			I ₀ (AFTER			ROUTE
				REVERSE NAT			
				SOURCE IP TO			
				W1)			
٥.		W1	P2	-	LOOPBACK	S2 _M	×
					ALIAS	S2 _M	W1
					NAT		S2
<u> </u>	S2 _M W1		P2	01	ROUTER		DEFAULT
	S2 _M S2			I ₀ (AFTER REVERSE NAT			ROUIE
				SOURCE IP TO			
				W1)			
				1		Ç	
				FIG. 6B	632	2	

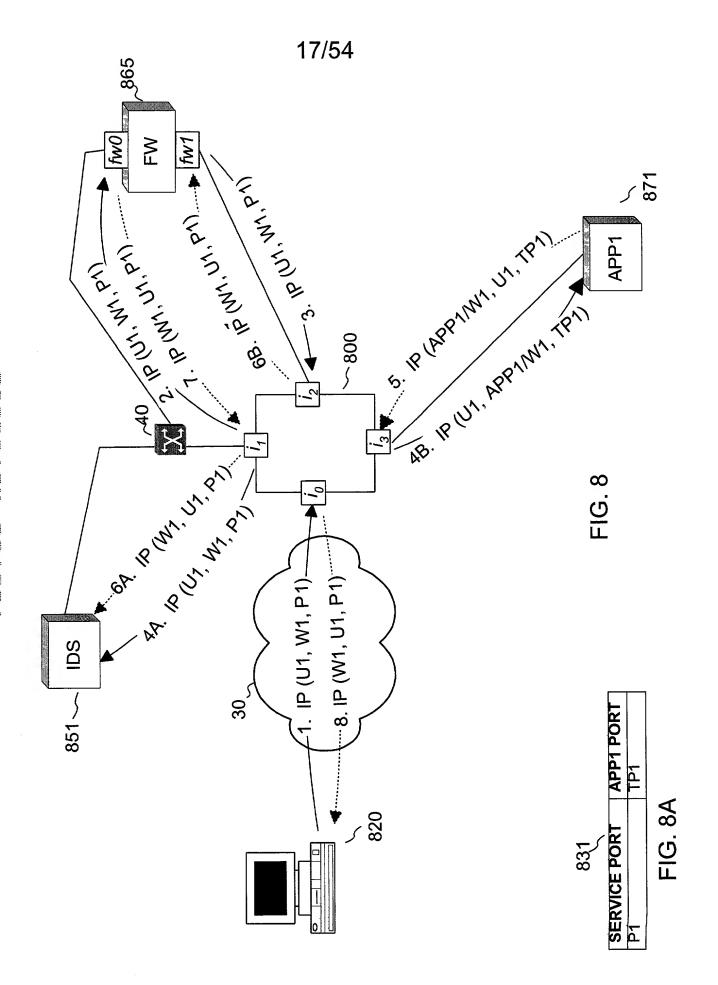


>

STEP	FROM	10	SOURCE IP	DESTINATION IP	PORT
	U1 (CLIENT)	PACKETING ENGINE	10	W1	P1
2		CE	01	W1	Р1
3	ERFACE	PACKETING ENGINE	,	W1	P 4
4	PACKETING ENGINE	VPN	01	W1	P 4
2	VPN	PACKETING ENGINE	1	W1	P2
ĜΑ	PACKETING ENGINE	IDS	Ū	W1	P2
6B	PACKETING ENGINE	APP1	O1	APP1 (IF NAT REQUIRED); W1 (IF LOOPBACK OR ALIAS SUPPORTED BY APP1)	P2
_	APP1	PACKETING ENGINE	APP1 (IF NAT REQUIRED); W1 (IF LOOPBACK OR ALIAS SUPPORTED BY APP1)	U1	P2
8A	PACKETING ENGINE	IDS	W1	U1	P2
8B	PACKETING ENGINE	NdA	W1	U 1	P2
တ	VPN		W1	U1	Į.
10	1		W1	U1	<u>~</u>
<u></u>	ACE	PACKETING ENGINE	W1	U1	<u>y</u> 9
12	PACKETING ENGINE	101	W1	01	<u></u>

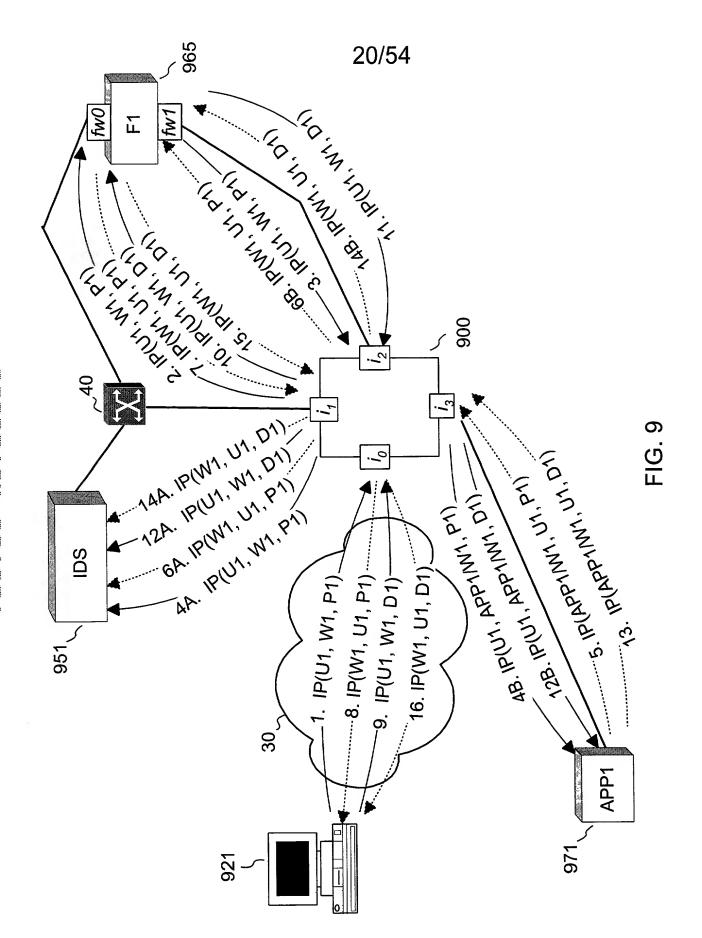
FIG. 7A

FIG. 7B



STEP	FROM	10	SOURCE IP	DESTINATION IP	SERVICE PORT
~	U1 (CLIENT)	PACK ENGI	01	W1	P
2	PACKETING ENGINE	FW (INTERFACE FW0)	U1	W1	D 1
က	FW (INTERFACE FW1)	PACKETING ENGINE	U1	W1	Ъ1
4A	PACKETING ENGINE	1	01	W1	D .
4B	PACKETING ENGINE	APP1	U 1	APP1 (IF NAT REQUIRED); W1 (IF LOOPBACK OR ALIAS	<u>F</u>
			4 D D 2 7 1 P 1 A T	מפרטאובט פו אין	+D4
ഹ	APP1	PACKE ING ENGINE	APP1 (IF NAT REQUIRED); W1 (IF LOOPBACK OR	5	<u>n</u>
			ALIAS SUPPORTED BY APP1)		
6A	PACKETING ENGINE	IDS	W1	01	D 4
6B	PACKETING ENGINE	FW (INTERFACE FW1)	W1	U1	P 1
7	FW (INTERFACE FW0)	PACKETING ENGINE	W1	U1	P 1
∞	PACKETING ENGINE	U1	W1	U1	D 4
				<i>)</i> 80	832

FIG. 8B



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	:	=	=	
· ******	:	-		
******	;	-		
-116945	71	,,,,,,,,		
41111				

ţ				

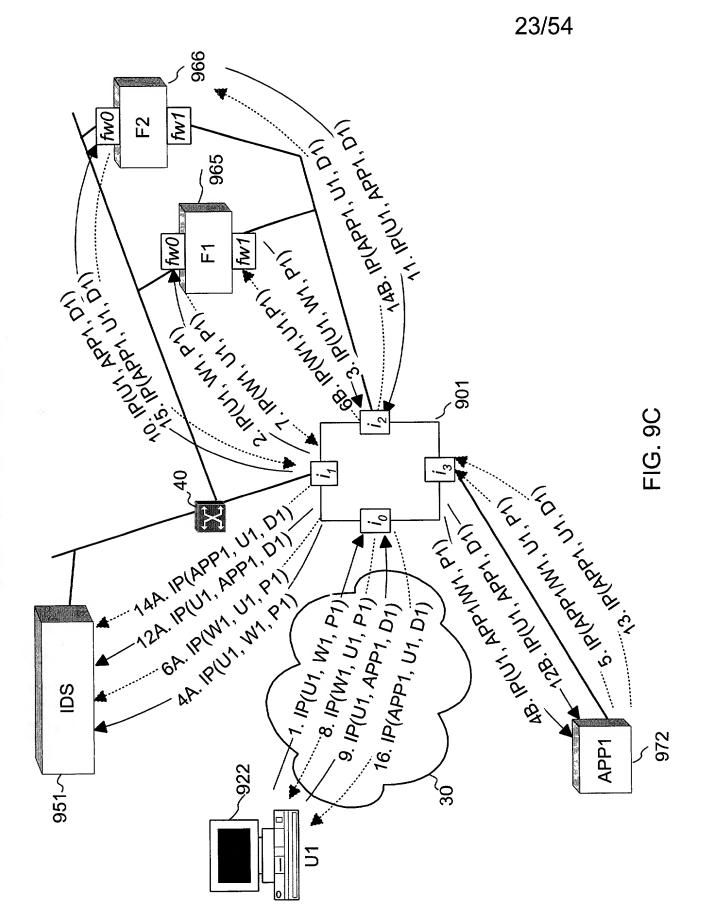
STEP		Т0	SOURCE IP	DESTINATION IP	PORT
_	U1 (CLIENT)	PACKETING ENGINE	U1	M1	P1
2	ENGINE	FIREWALL F1 (INT. FW0)	10	W1	P1
3	FIREWALL F1 (INT. FW1)	PACKETING ENGINE	01	W1	P1
4 A		IDS		M1	
4B	PACKETING ENGINE	APP1	U1	APP1 (IF NAT); W1 (IF LOOPBACK OR	7
2	APP1	PACKETING ENGINE		ALIAS) U1	P 4
			(IF LOUPBACK OR ALIAS)		
6A	PACKETING ENGINE	IDS	W1	0.1	P1
6B	PACKETING ENGINE	FIREWALL F1 (INT. FW1)	W1	5	Ρ1
7	FIREWALL F1 (INT. FW0)	PACKETING ENGINE	W1	U1	P1
æ	PACKETING ENGINE	U1	W1	01	ΡΊ
6		PACKETING ENGINE	101	W1	D1
10	PACKETING ENGINE	FIREWALL F1 (INT. FW0)	01	W1	D1
11	W1)	PACKETING ENGINE	U1	W1	12
12A	PACKETING ENGINE	IDS	01	W1	7
12B	PACKETING ENGINE	APP1	U1	APP1 (IF NAT); W1 (IF LOOPBACK OR	5
				ALIAS)	
13	APP1	PACKETING ENGINE	APP1 (IF NAT); W1 (IF LOOPBACK OR ALIAS)	Ŋ	D1
14A	PACKETING ENGINE	IDS	W1	U1	D1
14B		FIREWALL F1 (INT. FW1)	W1	D1	D1
15	(0M	PACKETING ENGINE	W1	U1	7
16	PACKETING ENGINE	U1	W1	U1	2
		70 JIE	۷٥	931	

FIG. 9A

		F	ABLES MAIN	TABLES MAINTAINED BY PACKETING ENGINE	CKETING	ENGINE		
RECE	IVE PACKET	LINBOUN	D TO PACKE	RECEIVE PACKET INBOUND TO PACKETING ENGINE	SEND	SEND IT OUTBOUND FROM PACKETING ENGINE	M PACKETIN	IG ENGINE
RCX	SOURCE	CE	DEST. IP	SERVICE	SEND	DEST. SYSTEM	SEND PA	SEND PACKET TO
NO	ADDRESS	ESS	ADDRESS	PORT	۸×	TYPE		
NT.	MAC	Ы			N T		MAC	<u>_</u>
_			W1	P1 OR PORT	1	TRANSPARENT	FW0™	W1
<u> </u>				IN RANGE OF				
				1025→1125				
6	FW1 _M		W1	P1 OR PORT	-	TRANSPARENT	IDSM	M1
1	:			IN RANGE OF	၉	LOOPBACK	APP1 _M	W1
				1025→1125		ALIAS	APP1 _M	W1
						NAT		APP1
_	IDSM		,	P1 OR PORT	3	LOOPBACK	APP1	W1
•				IN RANGE OF		ALIAS	APP1 _M	W1
				1025→1125	*	NAT		APP1
13	APP1 _M	APP1	1000	P1 OR PORT		TRANSPARENT	IDS™	
)		OR W1		IN RANGE OF	12	TRANSPARENT	FW1 _M	
				1025→1125				
_	FW2 _M	W1		P1 OR PORT	0	ROUTER		DEFAULT
•				IN RANGE OF				ROUTE
				1025→1125				

IG. 9B

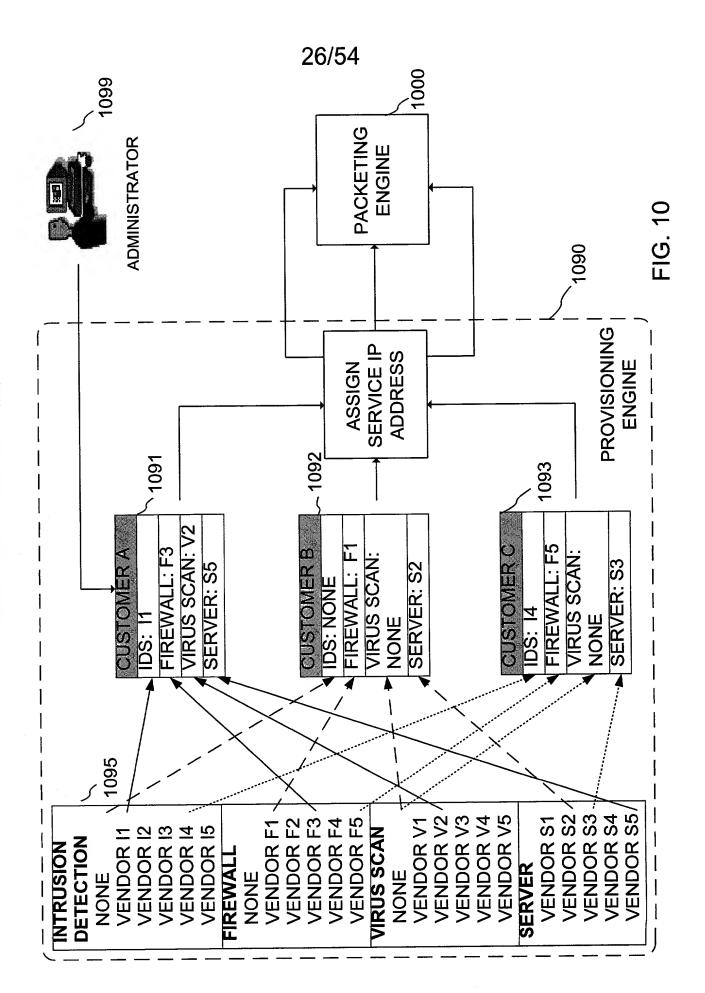
932

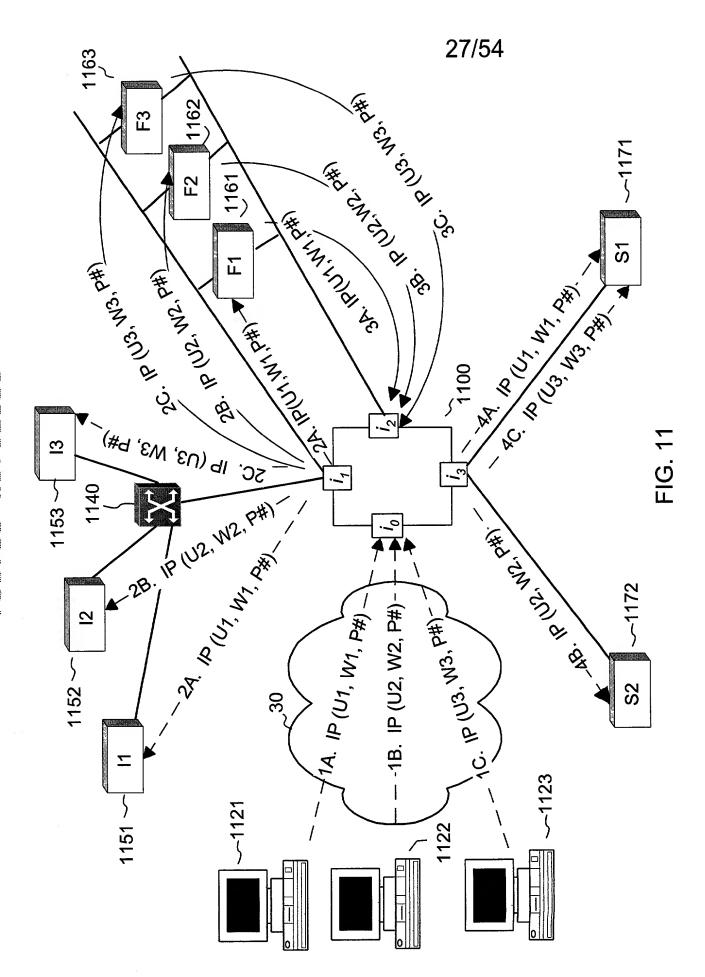


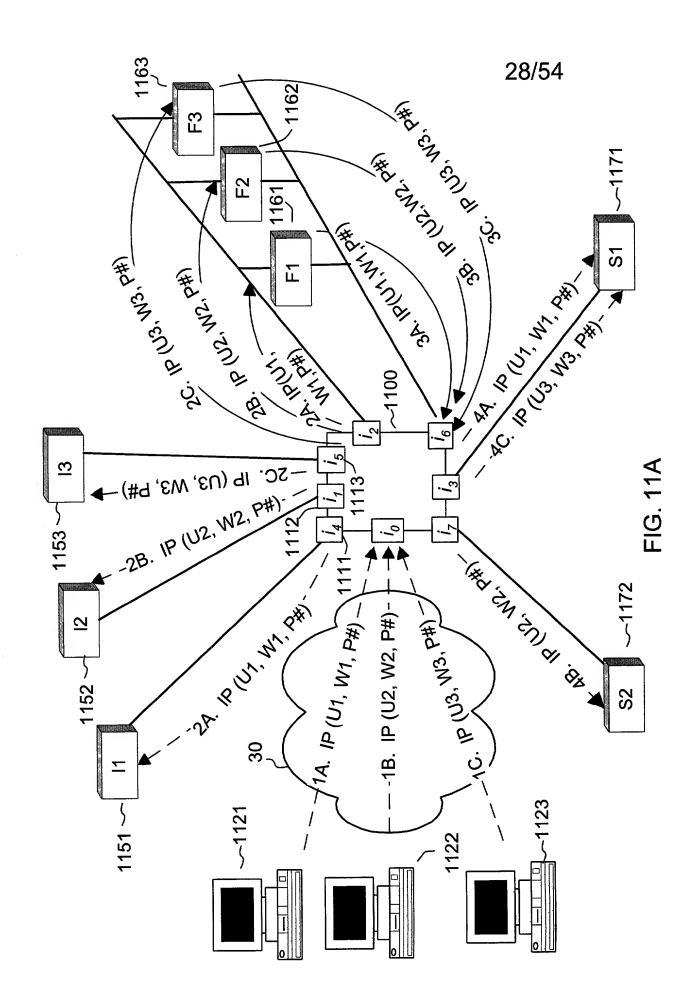
					· · · · ·										1					1	1				1	r—	ı	,	24,	/5	4
PORT	P1	P1	P1	P1	7					P1					P1	P1	Ъ	P1	D1	DI	D1	D1	D1	D 1	D1	D1	D1	D1			
DESTINATION IP	W1	W1	W1	W1	APP1 (IF NAT	REQUIRED); W1 (IF	LOOPBACK OR	ALIAS SUPPORTED	BY APP1)	01					U1	01	U1	U1	APP1	APP1	APP1	APP1	APP1	01	01	<u>U</u> 1	U1	<u>U1</u>		934	
SOURCE IP	01	U1	01	U1	01						REQUIRED); W1 (IF	LOOPBACK OR	ALIAS SUPPORTED	BY APP1)	W1	W1	W1	W1	U1	U1	U1	U1	U	APP1	APP1	APP1	APP1	APP1		O	Q6
10	PACKETING ENGINE	F1 (INT. FW0)	PACKETING ENGINE	IDS	APP1					PACKETING ENGINE					IDS	F1 (INT. FW1)	PACKETING ENGINE	01	PACKETING ENGINE	F2 (INT. FW0)	PACKETING ENGINE	SQI	APP1	PACKETING ENGINE	IDS	F2 (INT. FW1)	PACKETING ENGINE	01			FIG. 9D
FROM	U1 (CLIENT)	PACKETING ENGINE	F1 (INT. FW1)	PACKETING ENGINE	PACKETING ENGINE					APP1					PACKETING ENGINE	PACKETING ENGINE	F1 (INT. FW0)	PACKETING ENGINE	U1 (CLIENT)	PACKETING ENGINE	F2 (INT. FW1)	PACKETING ENGINE	PACKETING ENGINE	APP1	PACKETING ENGINE	PACKETING ENGINE	F2 (INT. FW0)	PACKETING ENGINE			
STEP	-	2	3	4A	4B					2					6A	6B	7	∞	O	10	11	12A	12B	13	14A	14B	15	16			

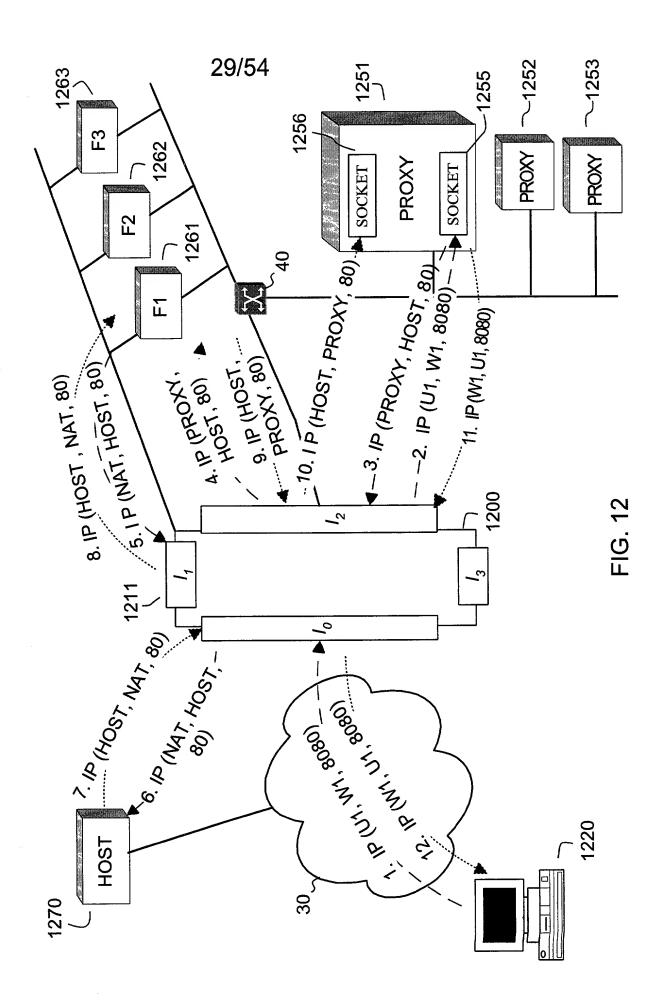
																								000000000			25/	′5 ₄	4
	S ENGINE	CKET TO	<u>a</u>		W1	W1	W1	W1	APP1	W1	W1	APP1				DEFAULT ROUTE	APP1	APP1	APP1		APP1				DEFAULT	ROUIL			
	OM PACKETING	SEND PACKET TO	MAC		F1(FW0)™	IDS™	APP1 _M	APP1 _M		APP1 _M	APP1 _M		IDSM	F1(FW1) _M			F2(FW0) _M	IDSM	APP1 _M		APP1 _M		IDS™	F2(FW1) _M					
S ENGINE	SEND IT OUTBOUND FROM PACKETING ENGINE	DEST. SYSTEM TYPE] :		TRANSPARENT	TRANSPARENT	LOOPBACK	ALIAS	NAT	LOOPBACK	ALIAS	NAT	TRANSPARENT	TRANSPARENT		ROUTER	TRANSPARENT	TRANSPARENT	SERVER IP	ADDRESS	SERVER IP	ADDRESS	TRANSPARENT	TRANSPARENT	ROUTER		S	935	
ACKETING	SEND	SEND			1		- 13	,		- 13		-1	-	12		0			- (ņ	3		-	12	01				FIG OF
NTAINED BY PACKETING ENGINE	ING ENGINE	SERVICE			ď	P1				P1			P1			P1	PORT>1024	PORT>1024	; ;		PORT>1024		PORT>1024		PORT>1024				ū
TABLES MAIN	TO PACKET	DEST. IP	ADDRESS		W1	W1				100							ABD4	APP1	-										
	BOUNE	щ <u>8</u>	20	<u>_</u>									APP1	OR	M	W							APP1		APP1				
	RECEIVE PACKET INBOUND TO PACKETI	SOURCE	AUUKESS	MAC		F1(FW1) _M				DSM			APP1,,			F1(FW0)™		E9/EW/41	W (1 AA 1) 7 I		IDSM	:	APP1 _M	Ξ	F2(FW0) _M				
	RECEIV	RCX	Z <u>!</u>	Z	c	2	7.				-		_	· 				_ و	2			-	c	<u>.</u>					

FIG. 9E









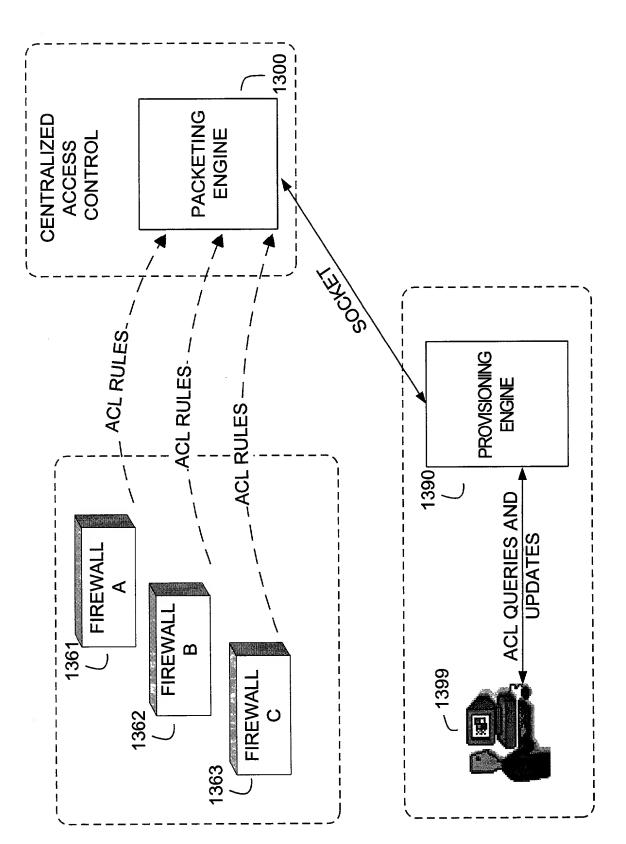


FIG. 13

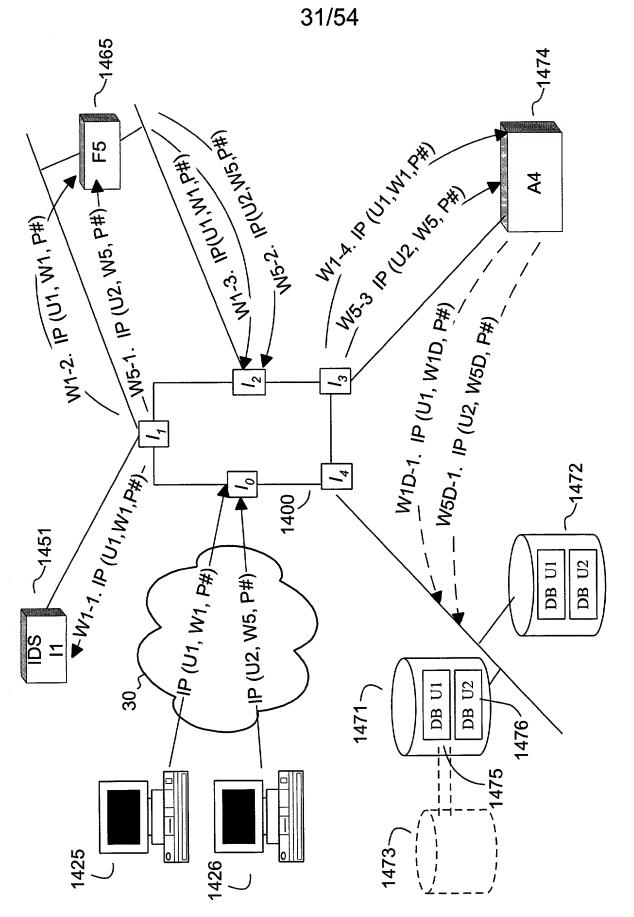


FIG. 14

SERVICE IP ADDRESS W1

_		F5	A4	
INTRUSION	DETECTION	FIREWALL	APPLICATION	SERVER
STEP W1-1		STEP W1-2/3	STEP W1-4	!

FIG. 14A

L1431

SERVICE IP ADDRESS W5

F5	A4	
FIREWALL	APPLICATION SERVER	
STEP W5-1/2	STEP W5-3	

FIG. 14B

SERVICE IP ADDRESS W1D

STEP W1D-1 DATABASE D1

FIG. 14C

SERVICE IP ADDRESS W5D
STEP W5D-1 | DATABASE | D1

~1434

FIG. 14D

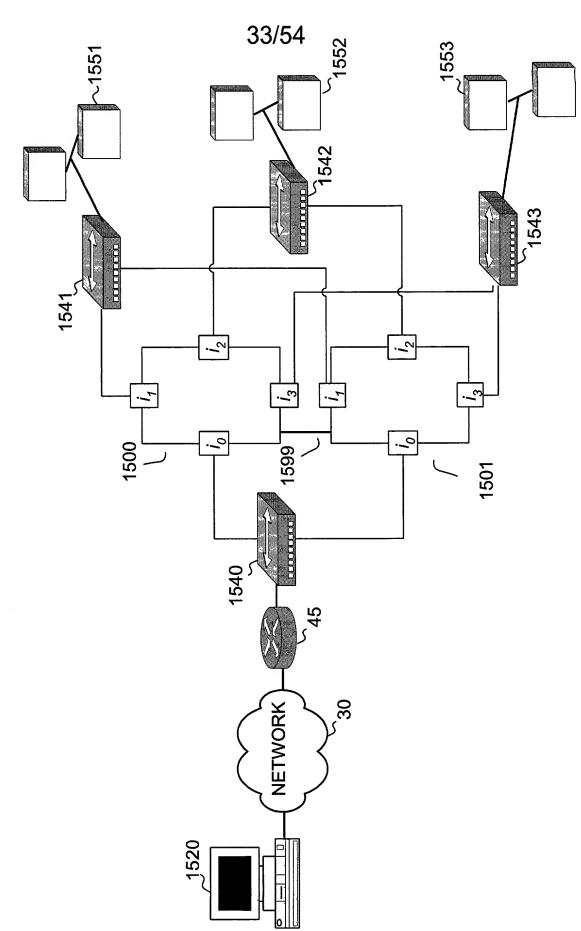


FIG. 15

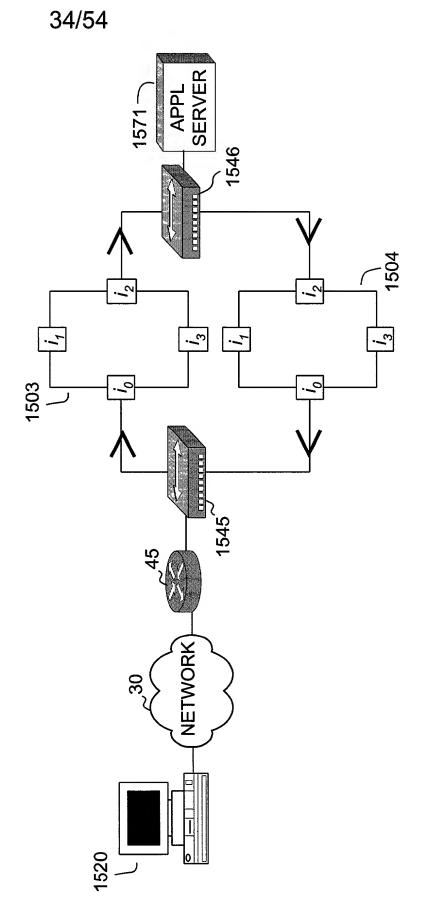


FIG. 15A

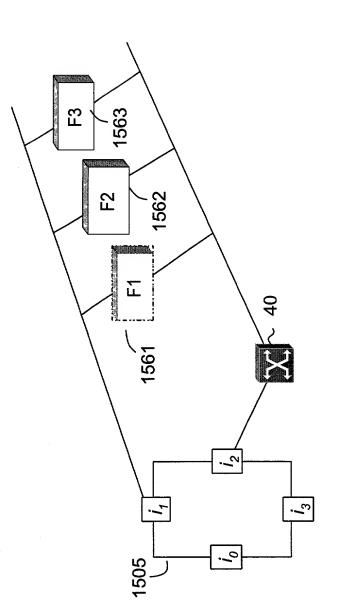
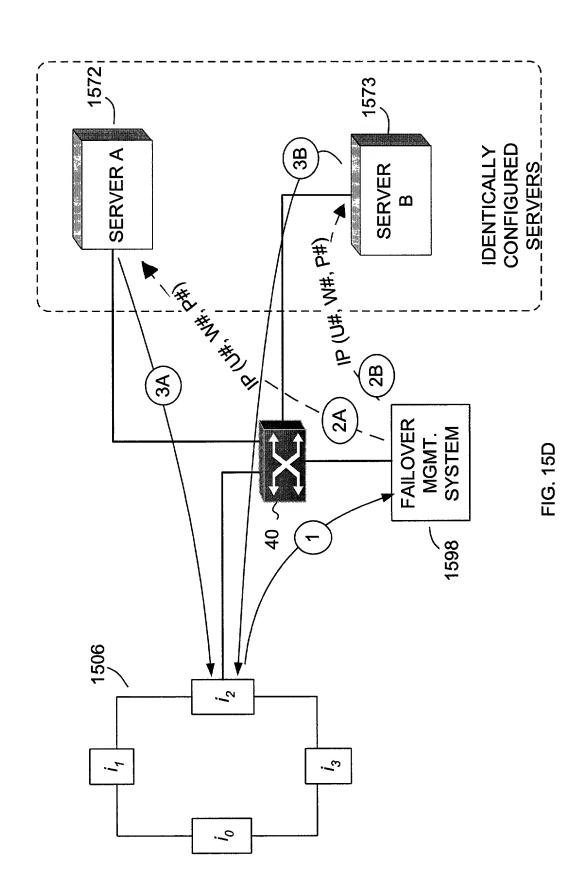
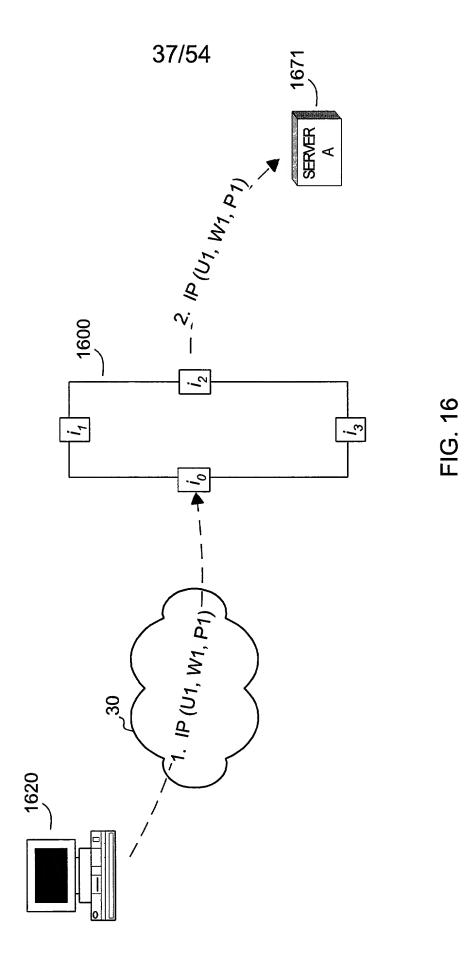


FIG. 15B

1533	7				
	IGINE	SEND PACKET TO	Д		W1
	M PACKETING EN	SEND PA	MAC	FIREWALL FIM	FIREWALL F2 _M
	END IT OUTBOUND FROM PACKETING ENGINE	DEST. SYSTEM	TYPE	TRANSPARENT	TRANSPARENT
	SEND	SEND FROM	INTERFACE		1

FIG. 15C





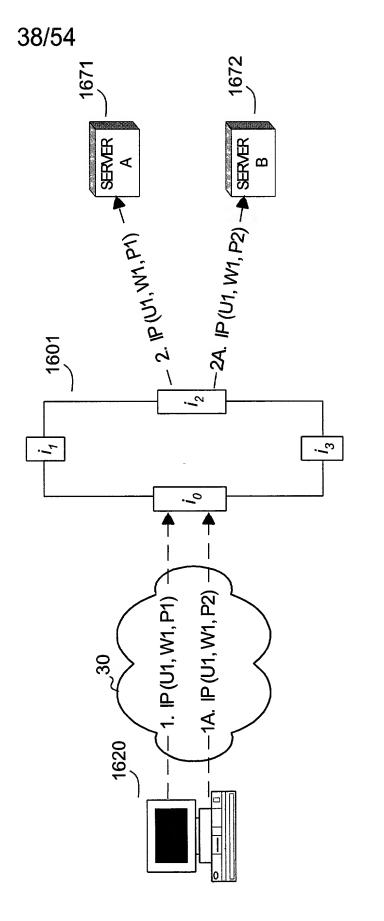


FIG. 16A

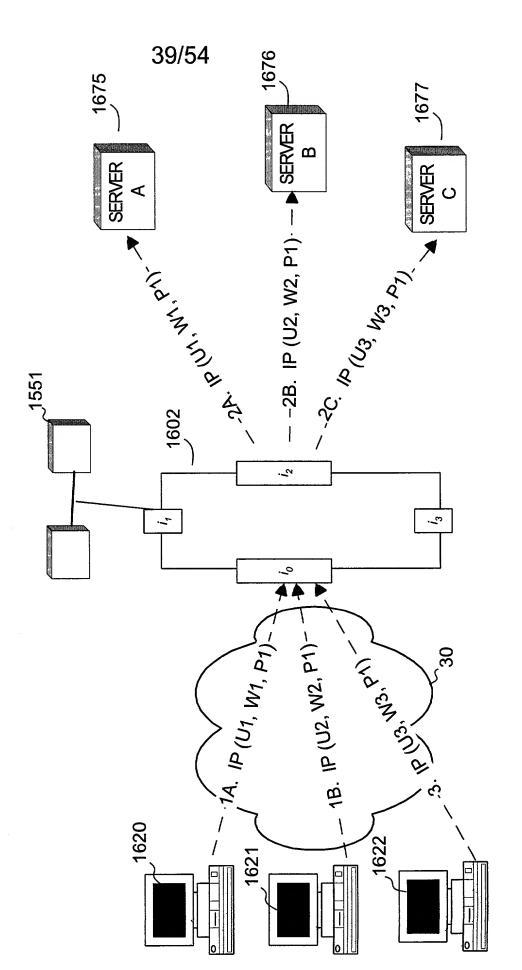
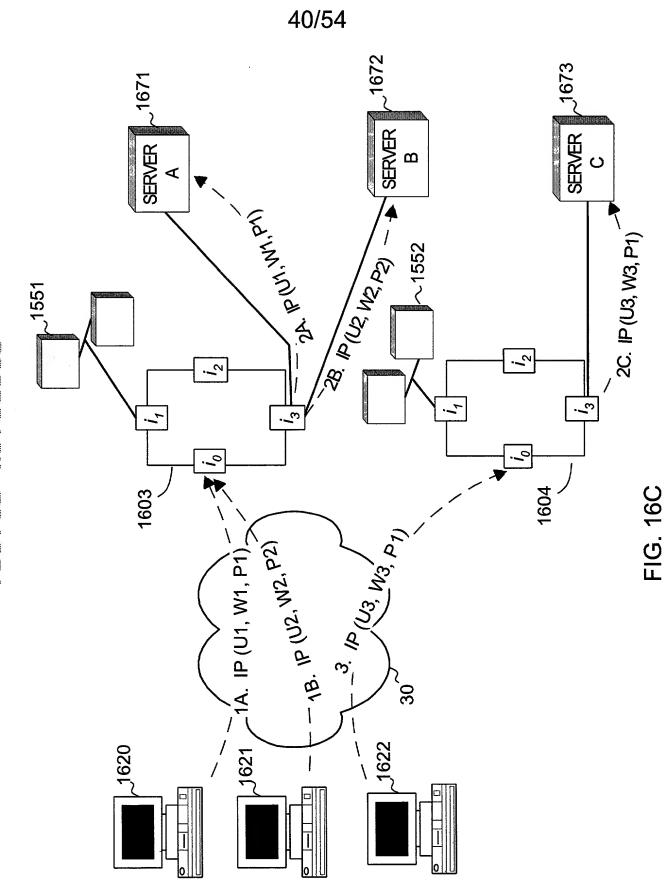
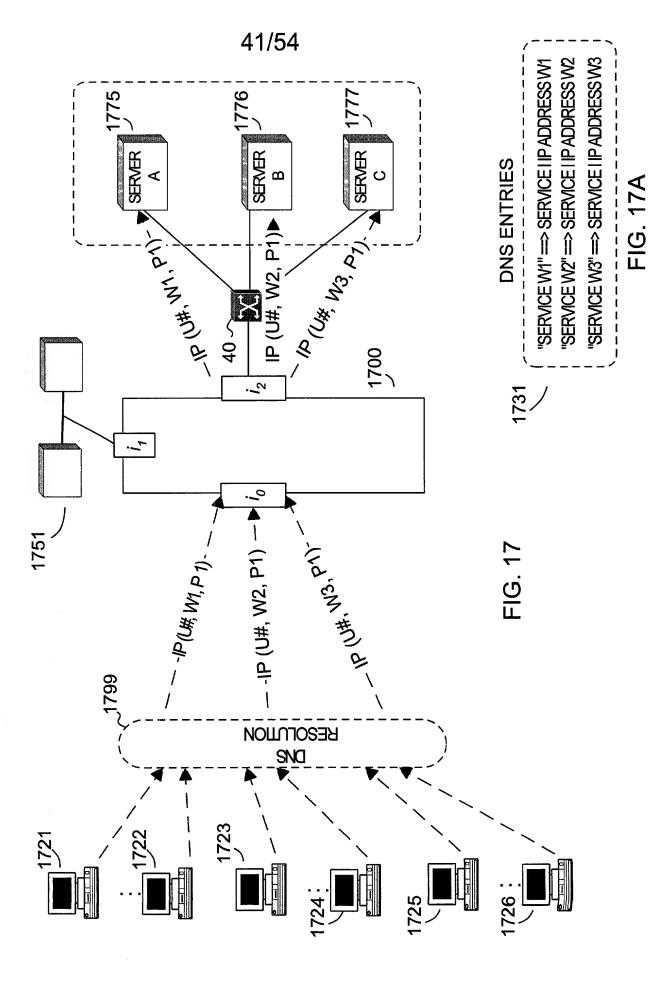
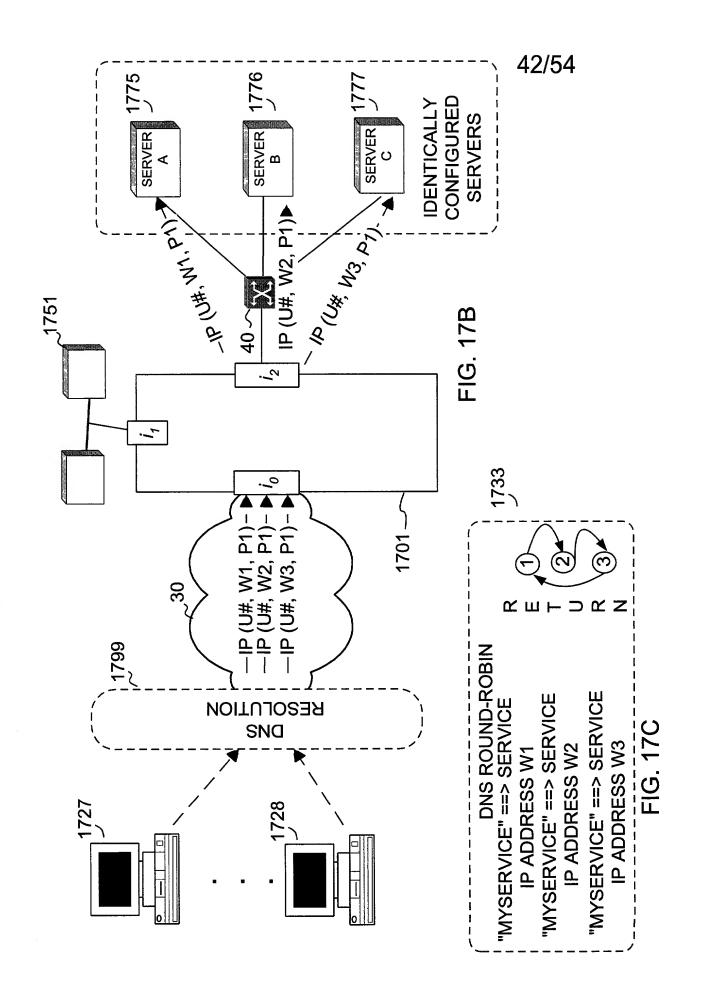


FIG. 16B







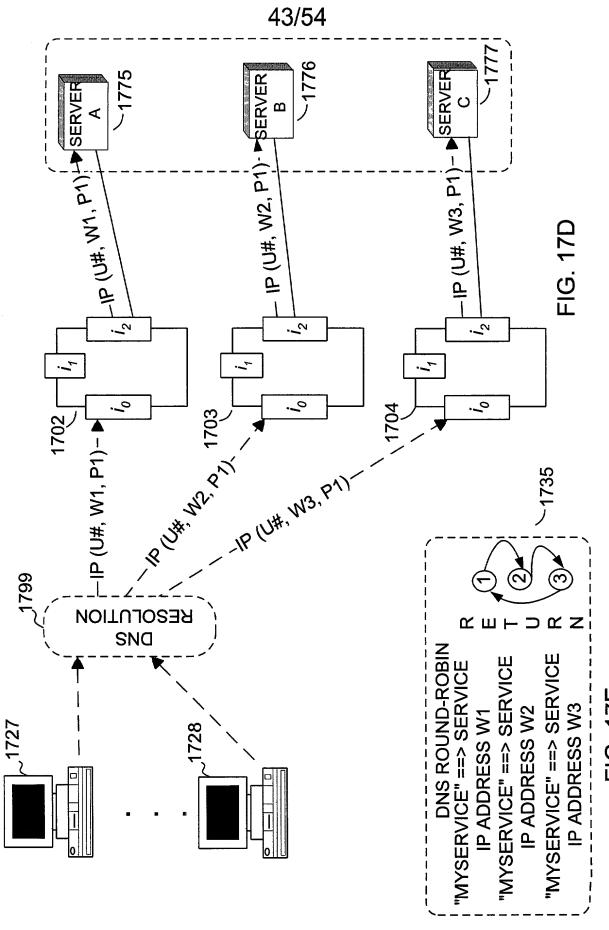
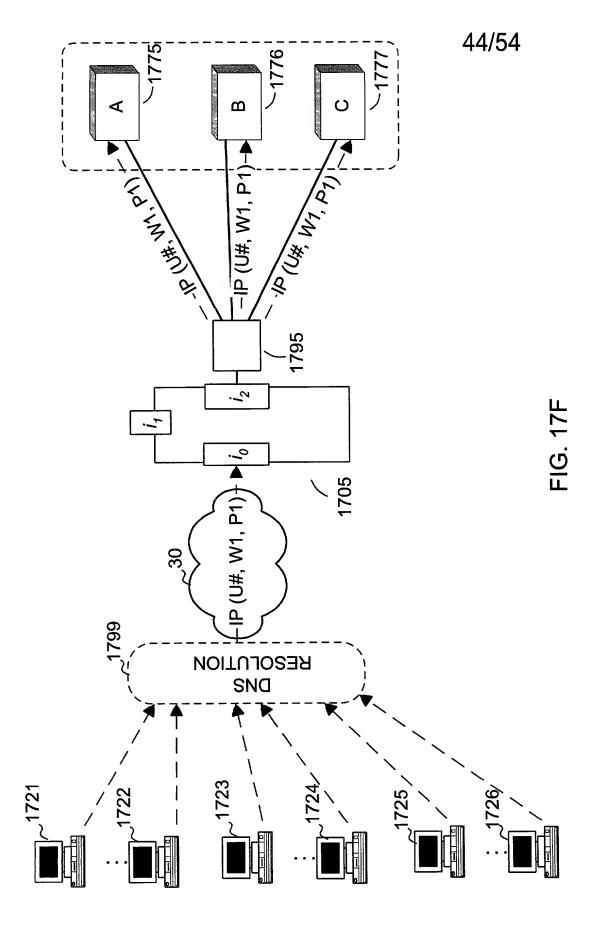
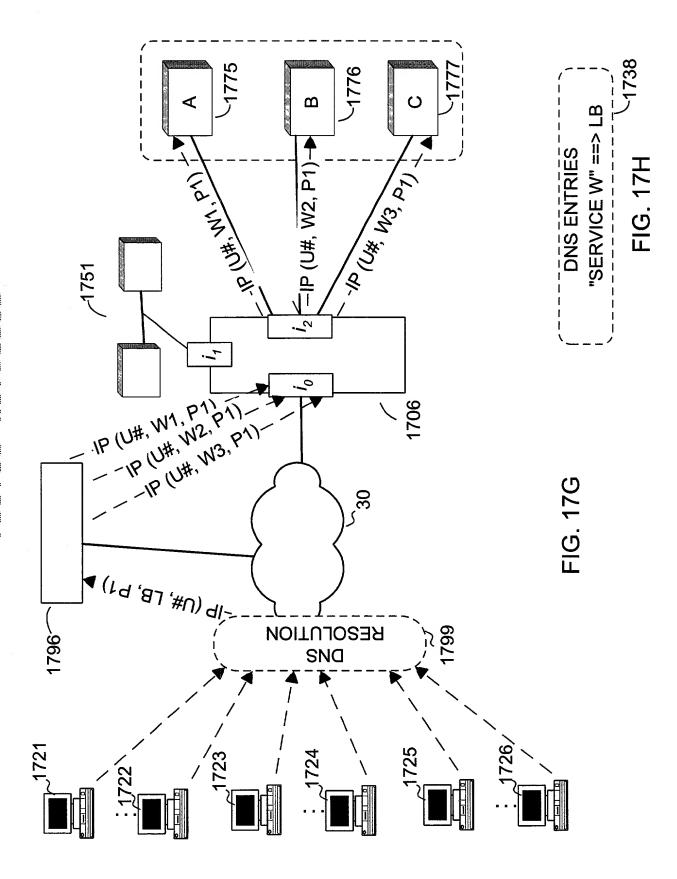
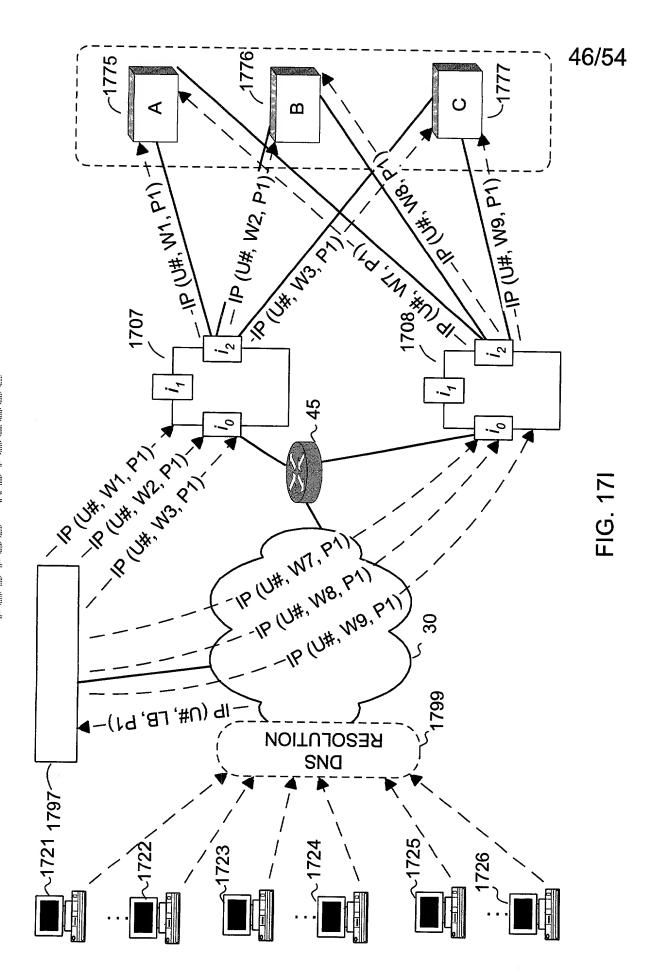
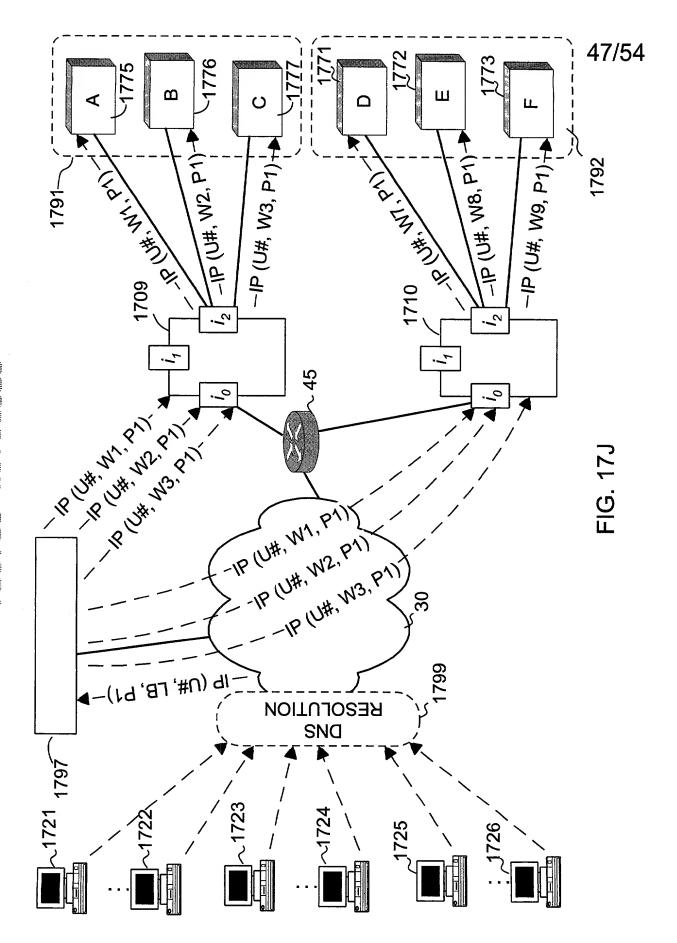


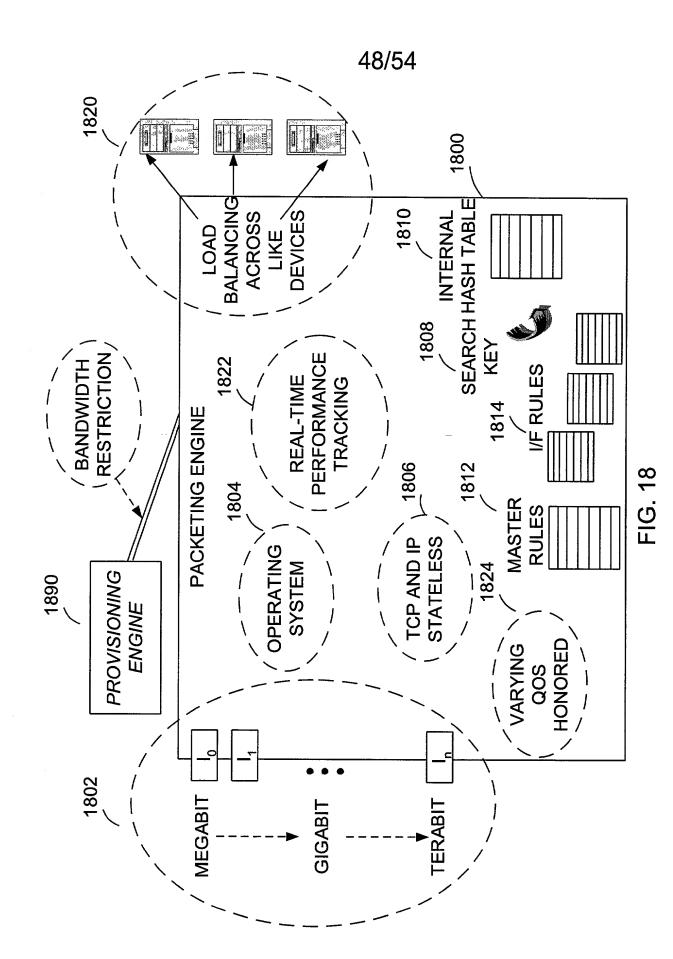
FIG. 17E

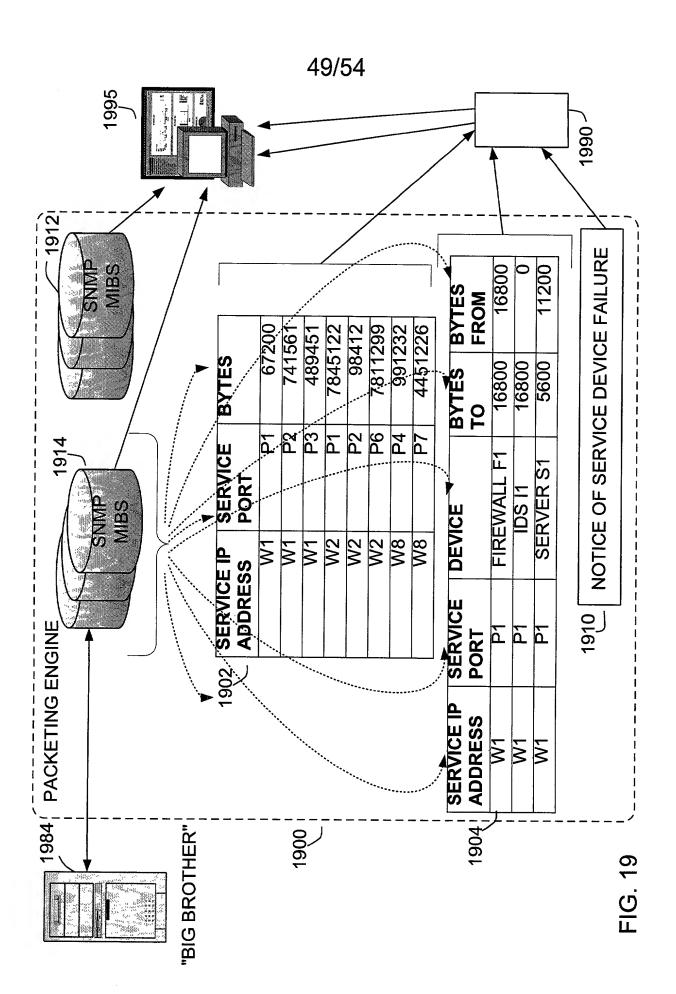












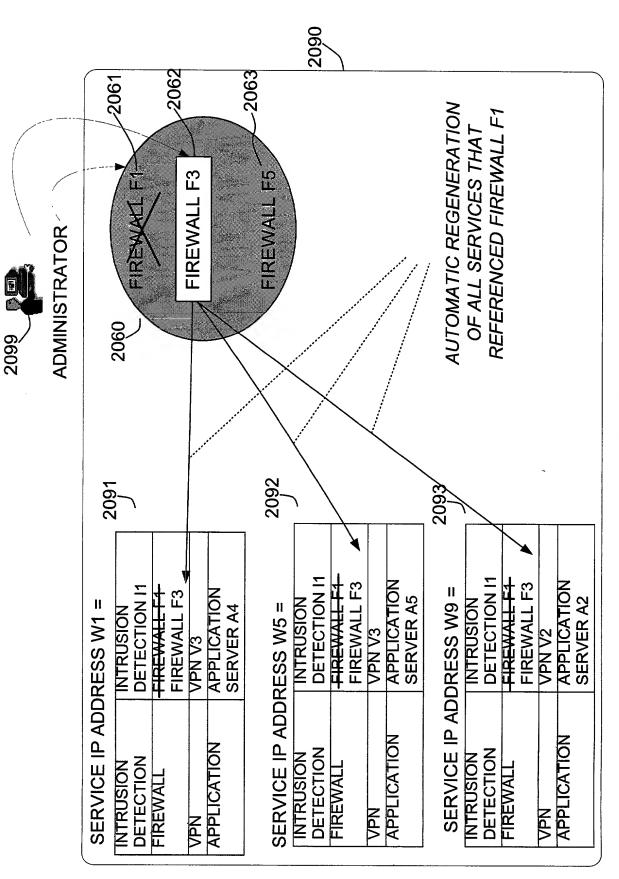
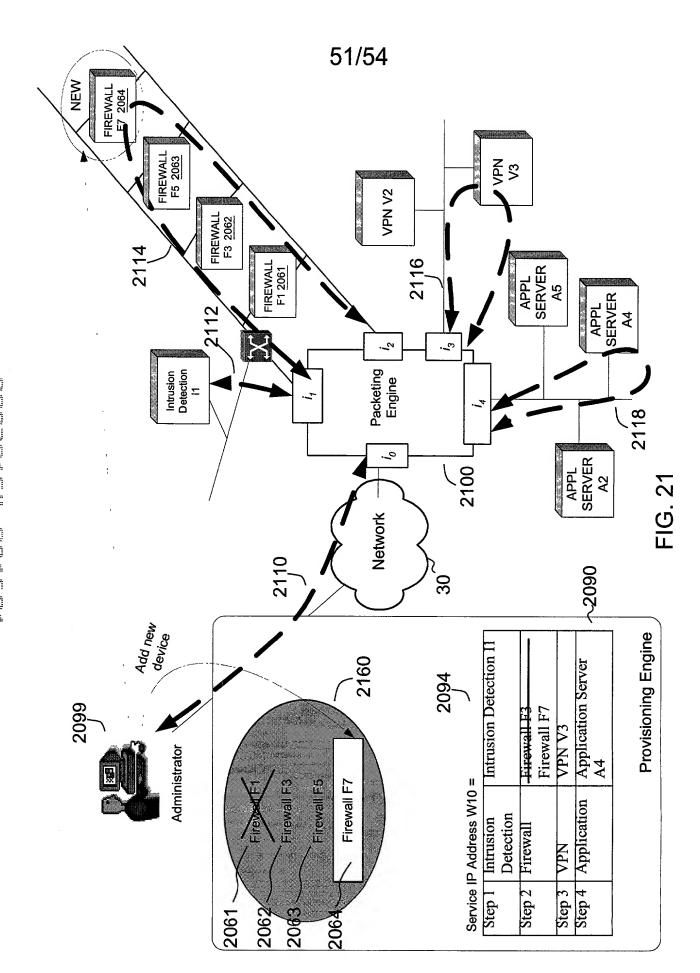
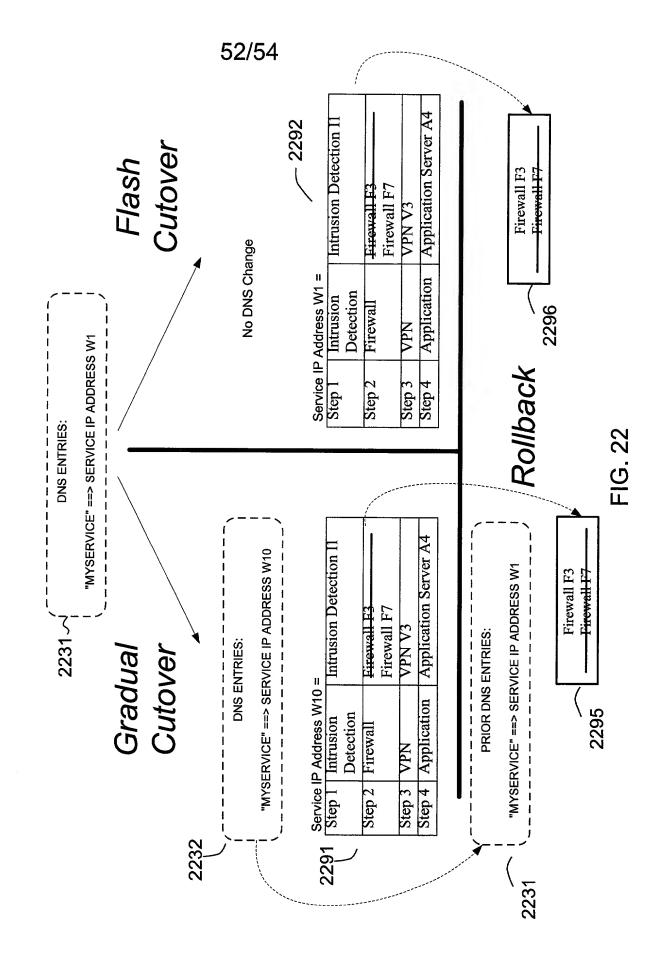
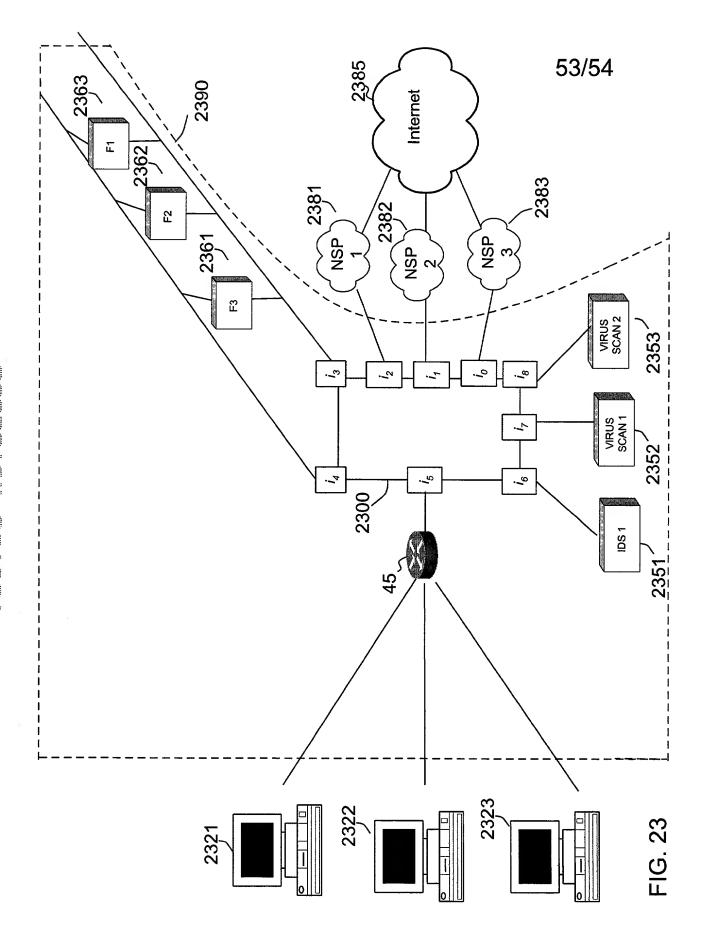


FIG. 20







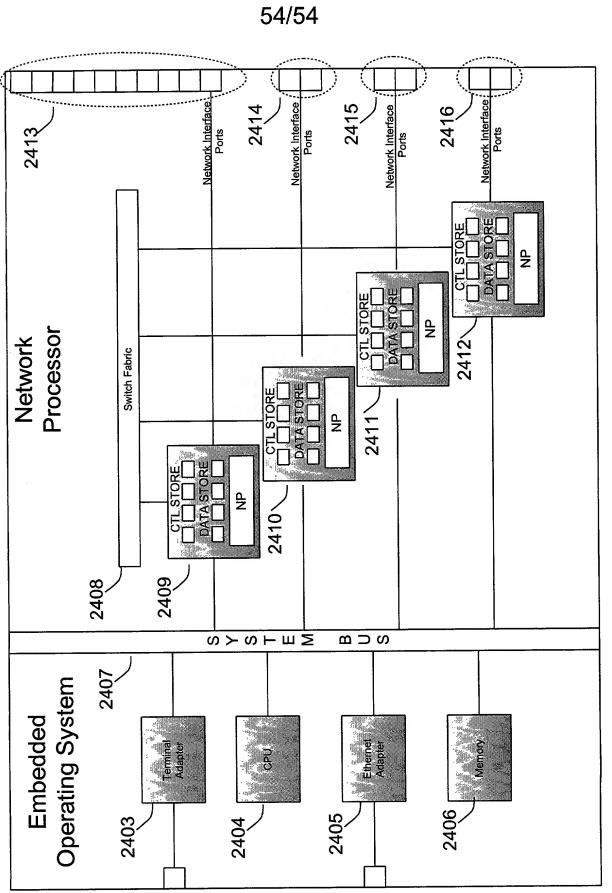


FIG. 24